ANT/LAN/02

0014

Book 2

ANTARCTICA

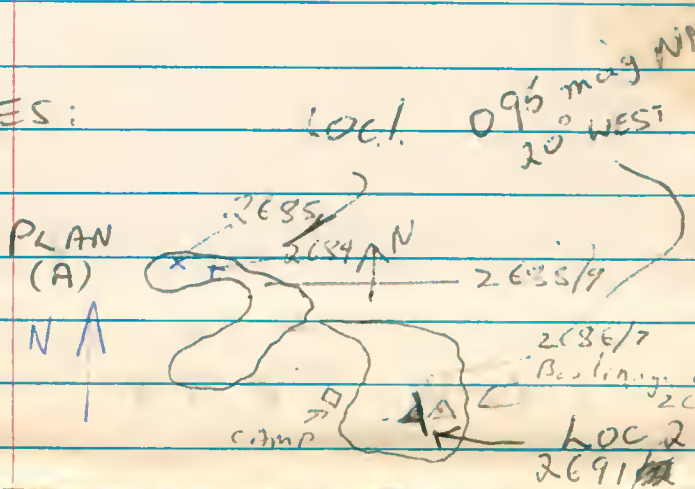
N°2684-

-2722

2693
~~2692~~
~~2679~~

INDEX

Page	Subject
	LANGWORTHY
	B.M.R.
	P.O. Box 378
	CANBERRA CITY
	A.C.T.
N°	
DATE:	
LOC:	
PHOTO.	
LITH.	
STRUCT:	
ST	
DIP	
LIN.	
PET. NOTES:	



N° (2684/85/86/87/88/89)(2690)

DATE: 7/2/73

LOC: 1 HAVSTEIN ISLAND, MAWSON COAST W.

PHOTO ROLL 20 - FOLD. LOC. NW OF CAMP.

LOC: Plan A of point "125" on 1:250,000 sheet

LITH - Ga - FS - Q - GNEISS (2685/6/7)

(BIO) - Ga - Diop - HNBL - FS - Calc Silicate

Ga - Diop - CS (2688/9)

HNBL - FS - Q - GNEISS (2684)

see below

STRUCT FOLD. LOC. - F_1, S_n def^n by Fe/Mg comp. layering.

ST. gp 020° mag. (toward Fold Is)

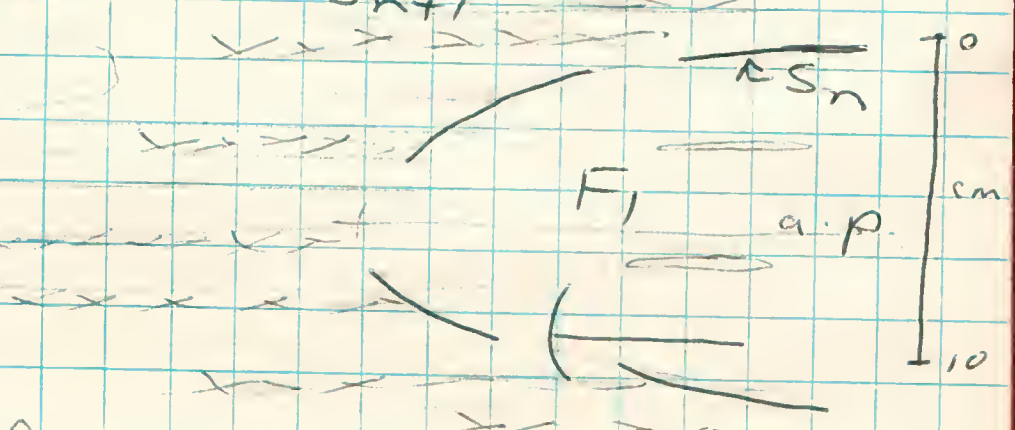
DIP gp 15° South

PLUNGE 35° to 050°

- Reclined isoclinal fold, S_n def^n by gross comp layering - laminated Hnbl - FS - Q - Gneiss / FS - Q - GNEISS

The laminated amphibole rich felsic gneiss has compositional lamellae def^n by Hnblende - Q/Fs layers

from <0·5cm to 3cm thick and amphibole free Q/Fs layers from <0·5cm to 3cm thick The ~~amphibole~~ Fs-Q-Gneiss has minor streaks of amphibole as photo ← S_{n+1} →



The lamellae of the Hbl-Fs-Q-Gneiss defn S_{n+1} & S_{n+1} is axial plane (f.e) to F_1

The amph. streaks are // to S_{n+1}

Sample is of the amphibole bearing material. (2684)

NOTES.

2684. from folded loc / see photo

2685 Sample of calc-silicate conformable inter band thickness appox 3 m - ~~flat lying~~ steeply dipping unit strike appox NE dip appox 70° SE Inter layered with Q/Fs - Gneiss in layers from a few cm up to a few meters thick Dominant minerals in CS bands are GARNET DIOPSIDE HORNBLENDE FELDSPAR MNR. BIOTITE

2686/7 two samples of Calc-Silicate unit appox 2m thick, near the highest point of outcrop ie the most eastern bit (near survey point) → 2

The two samples are similar to 2685. ~~The~~ The Calc-Silicate units are m. gr. (~1mm) "granular" m.i 50 light grey Garnet-Diopside-Hornblende = Fs-C.S.

NOTES The CS layers crop out as mafic bands with the Q/Fs-gneiss, often as conformable penetrative layers but also as "rolled up" ovate pods & isolated "stringers" where deformation has boudinaged thin layers.

(2688/9 - Garnet-diopside samples from calcareous pods (up to 20cm x 40cm) within the Q/Fs-n)

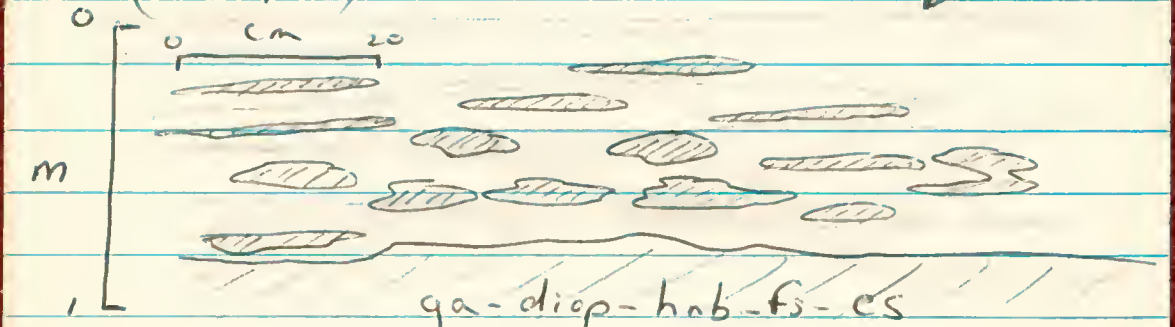
The Calc-silicate units are occasionally very rich in Ga-Diop. & produce, ovate pods, sub-angular fragments and stringers

of ga-diop. rock (2688/9) in disoriented obviously very disturbed zones within the Q/Fs-n.

The body between the CS and the Q/Fs-n is occasionally gradational (usually very well defn) & being

HNBS. - LAMB IN Q/Fs-n

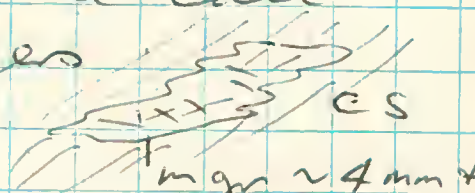
N°(2690)



Presumably thin layers of calc-silicate have been interlayered with Q/Fs-gneiss & subsequently boudinaged - loc. observed about 10 m W of high point is about 30 m W of eastern most point of outcrop. The unit here is almost flat lying having

a shallow dip of about 20°
to the SE.

Q/Fs mobilizable zones
10cm × 30cm & elongate
stringers have segregated
from within the calc-
silicate layers



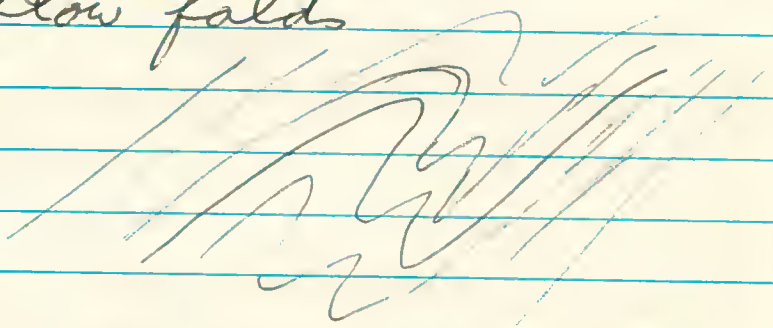
Mobilizate also evident
on a small scale in the
Q/Fs - n - don't interf.
as a migmatite though -
- not really ~~enough~~ enough
mobilizate.

ALSO - observing distant diff
exposures -

1. there is considerable
variety in strike & dip
of what appears to be
in the macroscopic

scale a homogeneous amphibolite interlayered (amph) - Fs - Q - gneiss and Garnet-Diopside - - hornblende - Fs - CS unit. No estimate of regional orientation possible.

2. In some areas considerable disruption has folded the unit into macroscopic tight isoclinal similar flow folds



Orientation impossible to record.

Possibly S folds to the South West with axial plane diffing at ~70° to the ESE



SO IN SUMMARY:

The area consists of a mesoscopically heterogeneous anisotropic amphibolite facies sequence of interlayered Garnet-diopside-hornblende-feldspar-light grey-"speckled" calc-silicate and (hornblende)-Quartzo-feldspathic-leucocratic-medium grained-gneiss.

The unit is folded into mesoscopic flow folds and has a variety of S/D orientations varying from ~70° to 20°. There are small isoclinal reclined folds within both the CS & Q/Fs-n. The regional lamination in the Q/Fs-n is a.p. to these smaller F_1 folds. Similar folds are ~~also~~ present in the C.S. being defined by 2-3 mm thick solid hornblende layers.

small (5m x 10m) zones of very calcareous rock crops out occasionally in the Q/Fs-n → fods & angular fragments of garnet-Diopside rock.

The bdy between the C.S. and the Q/Fs-n is generally well def^n ~ 0.5cm but boudinaging of C.S. layers has produced "Xenolith" like mafic fods & stringers in the Q/Fs-n near some bdys. (2690)

N°: 2691/2692

DATE: 8/2/74

PHOTO: -

LOC: 2 HAVSTEIN ISLAND
Mawson Coast West
Ref. to 1:250000 sheet, Point "125".

LITH: (HNB)-Q-Fs-n (Leucocratic gneiss)
Ga-Diop-Hnbl-Fs-Calc-silicate
(2691)- Tectonite showing bdy between Leucocratic gneiss

→

and calc-silicate. Honeycomb-weathering and "preffered orientation" of hornblende stringers defn S surface in the leucocratic gneiss. — Typical sample of outcrop. — the leucocratic gneiss has a granular "sandstone" appearance cropping out as irregular honeycomb blocks.

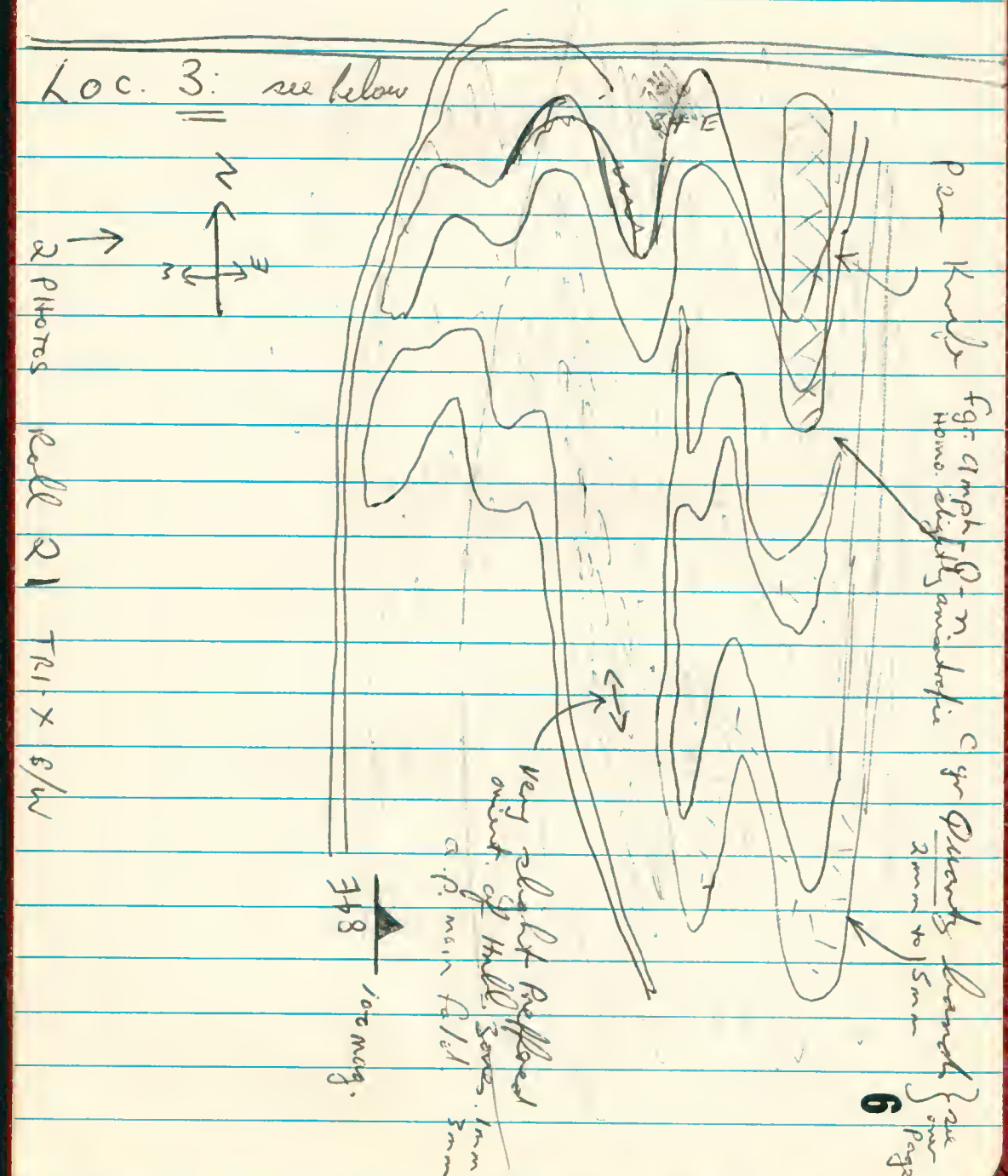
(2692) - sample similar to 2690 from just above body with CS showing deformed CS "Xenolith".

STRUCT: S surface defined by n/cs body
S: 095 mag NNW
D.P 20° West

C.S. units up to 2m thick
Body S surface // to preffered orientation of hornblende

streaks that diff. the sat.
surface in the Kenoebratic-n.

Loc. 3: see below



Loc. 3.

No: 2693, 2694

DATE: 9/2/74

PHOTO: Roll 21 Nos 5-10 (4 shots of surrounding cliff faces - looking West then North then with tele. N W. and 2 shots of fold closure illustrated on PG. $\frac{\lambda}{2} \sim 10$cm.

LITH:

1. Acid gneiss - composed of into laminated (a) quartz rich leucocratic layers (0.5cm to 3cm thick) and (b) amph (Hnbl.) - Fs(?) - Q - n (2mm to 3cm thick) (10% mafic content).

S_n surface thus def^n by compositional layering of (a) & (b) producing a homogeneous slightly anisotropic Q/Fs acid gneiss. The Amph - Fs - Q - n intabands have a very vague sub parallel (to S_n) foli def^n by the slightly preferred orientation of slightly

elongate (2mm × 3mm) hornblende "zones." Often this sub-parallel fol is not developed & the amphibole bearing lamellae are totally isotropic.
(2693)

2. Mafic Hornblende-Fs-amphibole
Difficult to tell if this is a C.S or true amphibolite. Some reddish material observed & could be garnet (no Diop.) The mafic material crops out as sub parallel (to Sm) lenses & irregular layers up to 3m thick (see photo of cliff line). These may be intrusive dykes but I tend to think they are folded & deformed amphibolite inter meta sedimentary layers.
(2694)

N.B. coarsening of grain size near margin & acid gneiss

STRUCT.

Sn defn. by compositional segregation in the acid gneiss phase.

Subparallel to Sn
- preferred orient. of small hornblende zones in acid gneiss.
- bdy. of amphibolite and acid gneiss

Now Sn

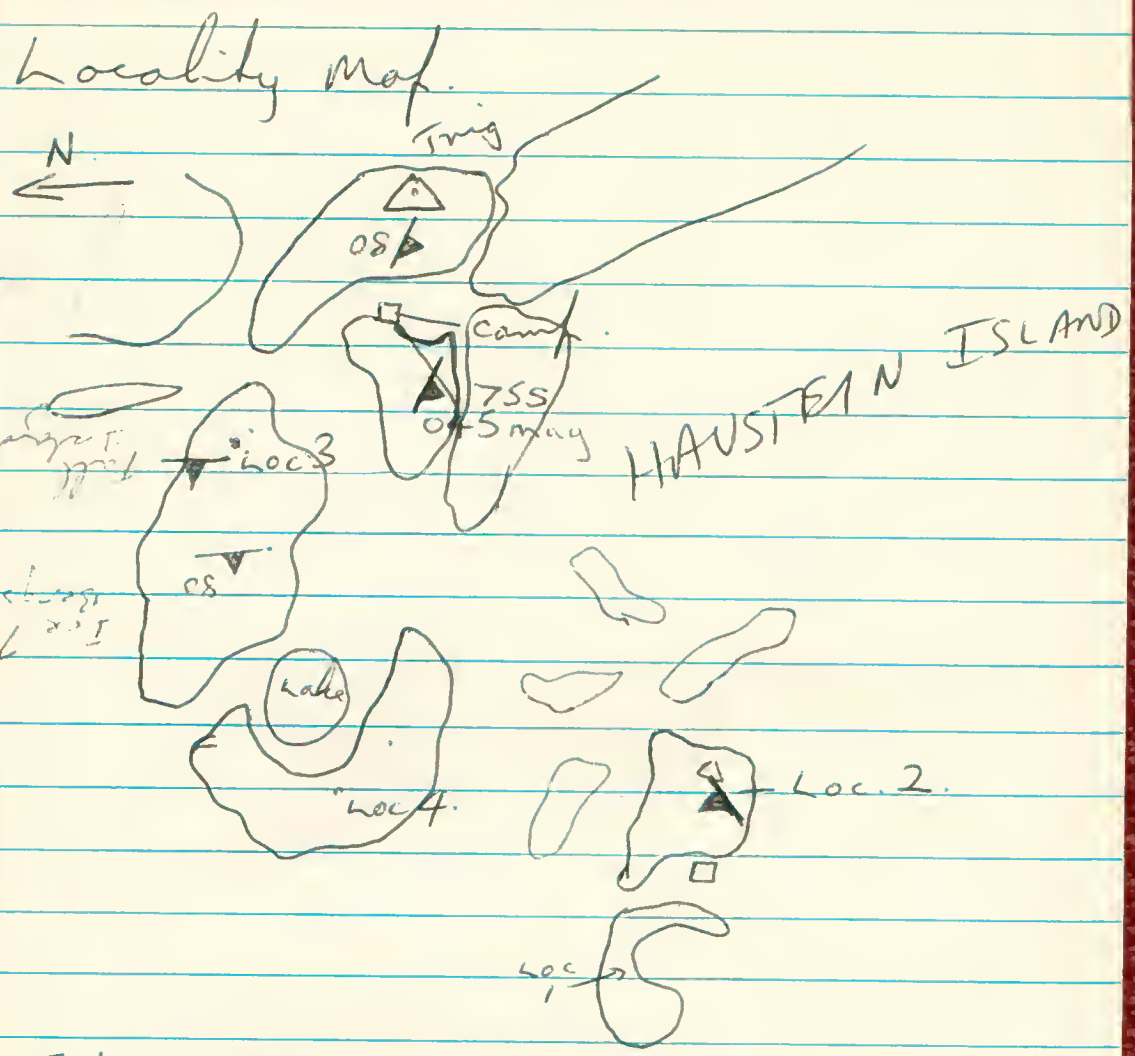
ST. ≈ 100° mag. (almost N/S)
DIP. 84° E variable but always steep.

Now Sn has been folded within the acid gneiss (see photos Roll 21) in tight isoclinal similar folds, Z folds plunging steeply to the E N^th^ap. dipping steeply to the E.
$\frac{\lambda}{2}$ ≈ 10 cm up to 15 cm.
There is evident considerable rose thickening but no ∞

axial plane f.e.
re page 6.
not possible to measure orientation
of these folds.
Suffice to say that the
a.p.s are sub-parallel to Sn
& they are tight ~~—~~ isoclinal
vaguely def'd fold of similar
style. folded surface Sn.

N°. 2695
PHOTO
LOC: 4 - Ralf way back
to camp. — 0 due W of camp.
DATE. 9/2/74.
LITH. Diof - Bio - Hbl. - CS.
from small pod. 4m x 6m
in acid gneiss.
N°. 2696
LITH. same as above from CS
pod. 1m x 0.5m.
LOC: right at camp ~~site~~ site

Locality Map.



IN SUMMARY:

The entire area West of the camp for several miles is almost (except for 1 or 2 isolated pods) devoid of cale-silicate consisting of a flow folded extremely deformed (plastic deformation)

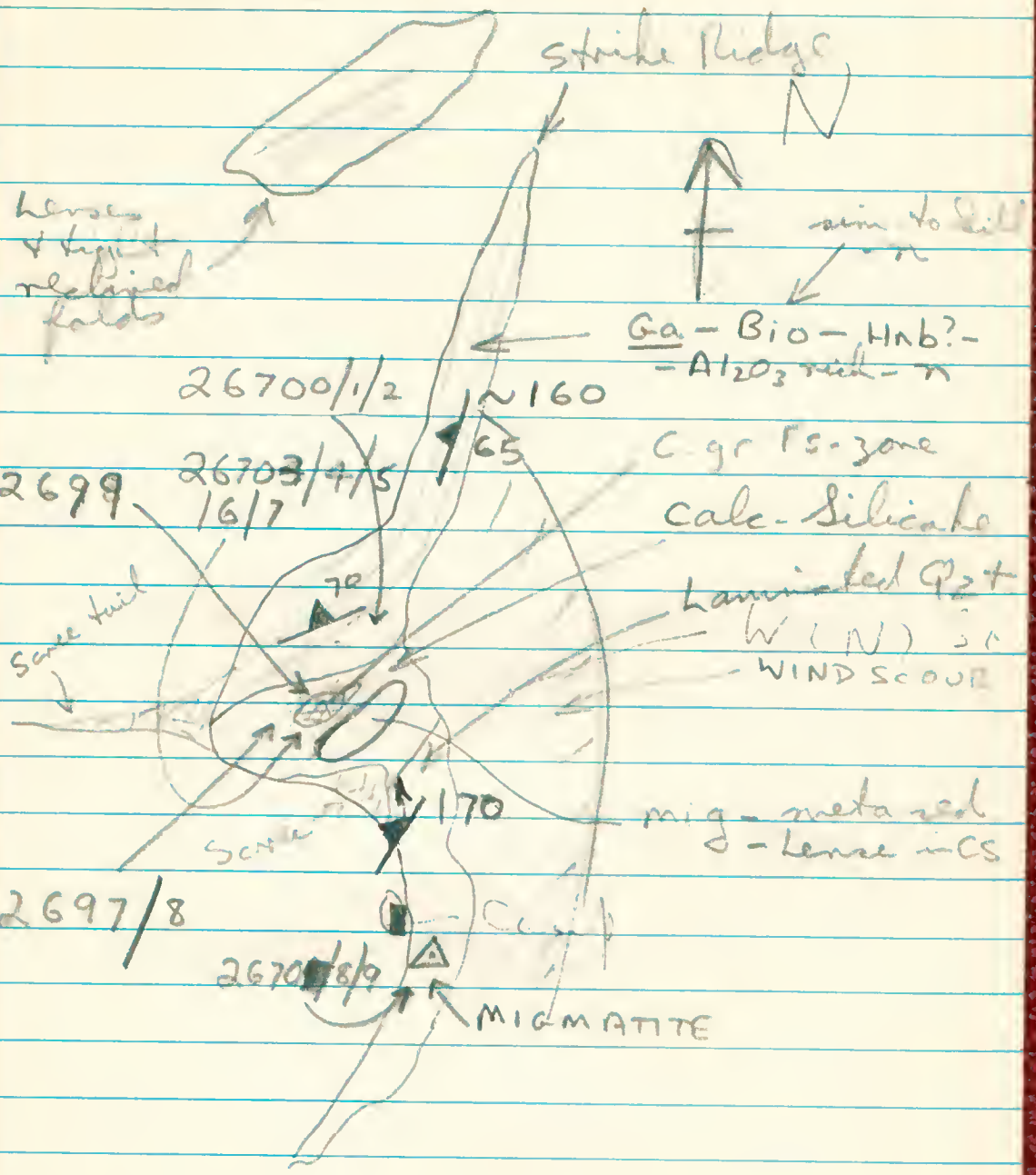
monotonous sequence of

Hbl - Fs - Q - acid gneiss and amphibolite

Interlayered 2 - 6 m. amphibolite in the acid gneiss

- No kinesis
- sandy stone buff to dark weathered homogeneous vaguely anisotropic leucocratic med. grained gneiss.

FRAME PK


strike Ridge
N
Lenses & thin reclined folds
Ga - Bio - Hnb? - Al2O3 rich - N
2700/1/2
~160
65
2699
2703/4/5
6/7
70
Scree tail
C gr rs. zone
Calc-Silicate
Laminated Qz+
W (N) of
- WIND SCOUR
170
mig - meta sed
S - Lense in CS
2697/8
MIGMATITE

From 17k

100 ft. North of ◇

Laminated Meta Quartzite

Strike [redacted]° mag
170°

Dip 64° to west

Lin pitch 72° to 90°
comp. streaking

photo roll 23 No. 20
+ 21



FRAME PK.

N° 2697/8/9 700/1/2/3/4/5/7/8/9

DATE 17/2/74

PHOTO Roll 23 N° 20 →

LOC FRAME PK. – a bloody cold hole 6000' –30°C + 120 KNTS

LITH 1. C gr Q/Fs (Poss. mobilisate) Rich very deformed acid-m meta-sediment. 2708/9

2. Calc-Silicate - Forsterite - spinell - marble 2697/8 with reaction rims & sediment of Poss Flourite - Diopside-Bio-Calcite 2699 703/4/5/6/7

3. Ca-Bio-Hyp? - Al_2O_3 rich meta sediment - meta pelitic mat 2700/1/2

FRAM PK.

STRUCT. ST. 170 mag

DIP. 64 W

LIN

350 mag

33 N+L.

DAVIS STATION

LOC: [illegible] ISLAND. NMS 115

N°: 2710/11/12/13/14/15/16/17/18/19/20/21/22/

PHOTO: ROLL 25 N°S ~20+

- DAVIS STN FROM △
- Only layering / surface def^n by compositional alteration (e.g. mafic rich (90%) to mafic poor more typical (~10%) ave exp.

LITH. ① Hyp/Hb. mig tonalite
Hyp/Hb – Bio – CORD – QUARTZ – Fs – ?
- Homogenious – (porphyroblastic) massive rock.

② Xcutting f.gr. mafic dykes.

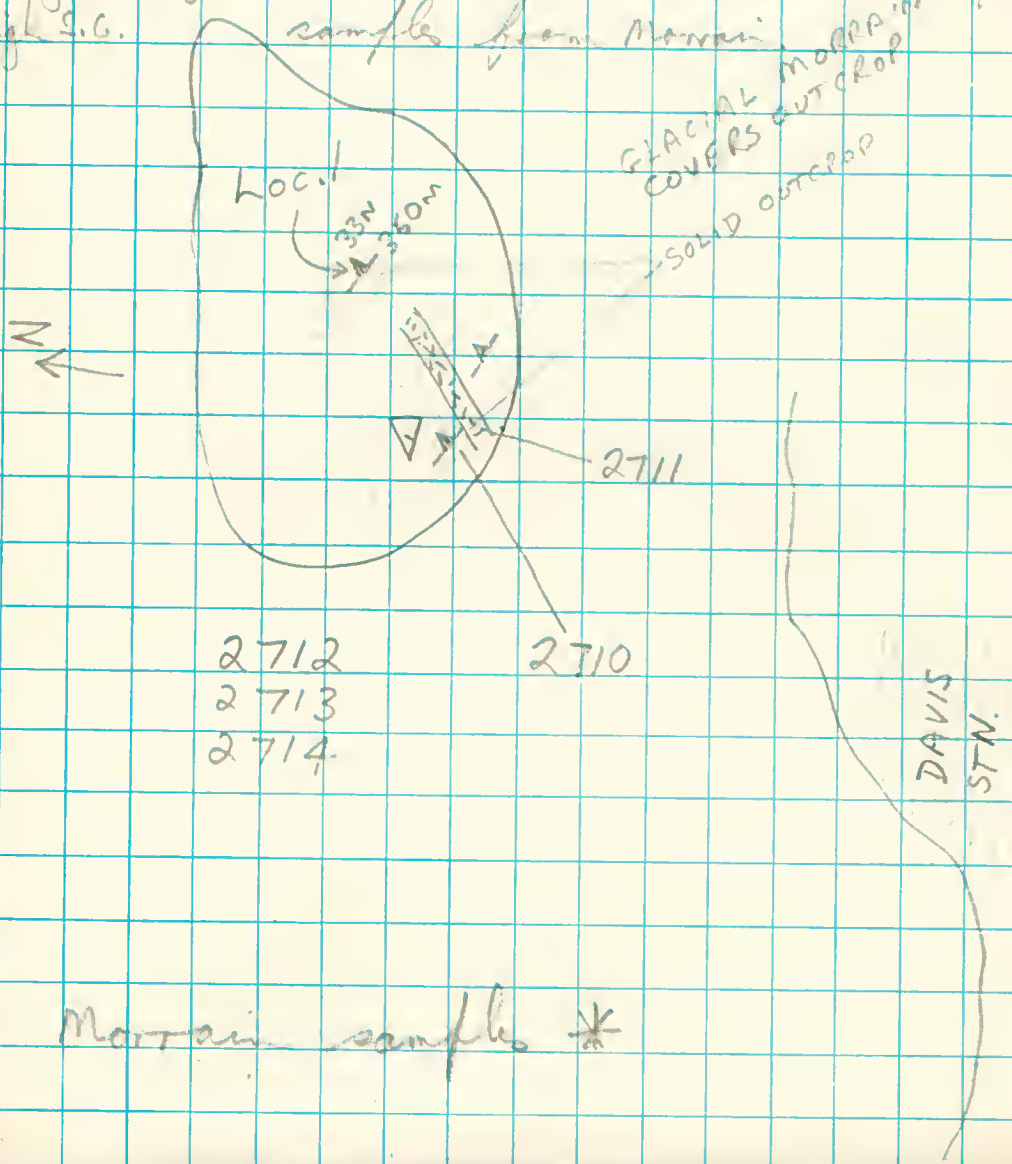
③ Garnet – Bio – Calcite – Cc
Rubble from loose rocks near △

STRUCT: ST. (Above NNW) (350 mag)
DIP. 33 N^{LL}.
– Concordant diffuse veins quite coarse [illegible] examined.

12

(9770) Skua Island 9810...

Island consists of homogeneous (anisotropic) fgr Hyp-Hbl-Cord-Q-Fs-gneiss cut by discordant late stage fgr. unfol. dykes. Garnet lamin Talc-Silicate and Mafic lyl S.C. samples from Morain



Morain samples *

LITH.

2710: Fine grained homogeneous (anisotropic) (Bio-r shear zone) — Hyp - Hnbl - (blue quartz - Cord) — Fs - gneiss

Typical country rock specific showing surface def^{n} & faulted orientation of small zone of Leucosome (up to → → 1cm x 2mm)

2711: Sample from outcrop of ~~intermediate~~ very f. gr. basic dyke N.B. flag laths & green ferromag. Dyke, discordant - undeformed approx 2m wide - no apparent contact effects.

* 2712 Marble.

* 2713 Poss cordierite lump. (or quartz)

* 2714. (Bio) - garnet rock

* 2715 (Bio) - card? - cgr - Cs ?

* 2716 Pegg. intrusive mafic rock. c gr. NR. pyrite.

* 2717 Course grained Hyp. or banded garnet - card? - -felds/gr - gneiss

* 2718 m.gr laminated Bio - q/card - Garnet - - FS - gneiss S def^n by preferred orientation of Bio & card layering.

* 2719 f gr mafic rock - Ilm. & alt about 70% of the rutile etc around

* 2720 - sample of amphibolite
Bio - q/card? - Fs - grains

* 2721/22 - V.C gr. Poss. Card -
(blue creamy min. may
be quartz) - Bio - Plag -
- grains.
Poss. defined fcg.
2721 for T/S
2722 collection

STRUCT: ST (NNW) 350 mag
Loc. 1. DIP 33 N
S surface photographed Roll 25
Nos ~20+
S surface def^n at Loc 1 by
the comp. layering of Hbl.
rich layers in the typical
leucocratic gneiss eg 2710
Comp. layering restricted to
an area of about 20 m x 10 m of
outcrop elsewhere S surface
def^n by preferred orientation
of small hornblende zone
ref 2710

- both surfaces are parallel

60

1 Late Model Ration Pack.
2 Cans Refresh. Orange.
2 Plates
* 1 Pack H frame.
6 carabeners
6 Rock Pitons CM.
1 Can opener
1 Jar Vegemite
2 Waist Bands.

CANBERRA ACT 10/9

7TH 0508 ALAN LANGWORTHY MAWSON

ANTACT 4911/61 YIUHN YODAK

CALL YISTA

BRON

